The History of Archeological Research at Medicine Creek Reservoir

Robert Blasing
Nebraska-Kansas Area Office
Bureau of Reclamation

Introduction

Medicine Creek is a tributary which flows to the southeast to join the Republican River, which in turn contributes to the Kansas River, the Missouri River, and the Mississippi River, before emptying into the Gulf of Mexico. Medicine Creek joins the main channel of the Republican in southwest Nebraska, near the center of the Republican River Drainage Basin. The entire drainage of Medicine Creek is only about 75 km or 50 miles in length miles. It drains an area of slightly under 700 square miles.

Medicine Creek Reservoir was completed in 1949. It was built primarily to control destructive flooding on both the Medicine and Republican Drainages. It is also part of the Frenchman-Cambridge Irrigation Project, administered by the Bureau of Reclamation. Although there were important archeological finds along Medicine Creek as early as the 1931, most of the significant archeological research there has been done in response to construction and subsequent management of the Reservoir.

The area around the Reservoir is covered by a deep mantel of wind blown or water redeposited loess, which has enhanced the burial and preservation of archeological sites. The terraces of this deposit have themselves been the focus of scientific inquiry (Brice 1966, Elias 1949). Where bedrock is exposed, it is the Cretaceous Niobrara Formation, which includes a major source of raw material for prehistoric stone tools. This is the material is usually called Niobrara, Smoky Hill or Republican River Jasper, and it occasionally occurs in numerous beds which add up to several feet of total thickness at a given exposure.

In addition to the Niobrara Jasper, there are other natural features which made Medicine Creek a focal point for prehistoric populations. The Creek is spring fed, and was a very reliable source of good quality water, even in periods of drought. The large deposits of clam shell in some archeological sites on the Reservoir also attest to the availability of aquatic food sources. This corner of Nebraska is often referred to locally as the Banana belt, because the area consistently has the warmest winter temperatures in the State.

One additional draw to the area was a much used trail. This was the Fort McPherson Trail, which followed the divide between the Deer and Medicine Creek Drainages and was used as a military trail in the historic period, but no doubt used in prehistoric times as well (Strong 1935:242: Williams Personal communication.)

The History of Archeological Research

Prior to the planning of Medicine Creek Reservoir, several archeological sites had been recorded along the Medicine Creek Drainage, though not all were within the boundaries of the Federal Reservoir. These were mostly due to early explorations by William Duncan Strong and A.T Hill in 1931 (Strong 1935:242) and Waldo Wedel (1933, 1934). There was also some research being done by paleontologist, Erwin H. Barbour (1927, 1930). His work identified two species of shovel tusked mammoths, and other extinct species.

In August 1946, The planning for Medicine Creek Reservoir was underway, by the Bureau of Reclamation. Marvin Kivett and J. Mett Shippee spent eight days looking for archeological sites in the proposed Reservoir area. They found 14 Upper Republican sites and one Woodland site, which encouraged a return for further excavation, in 1947 (Kivett 1947).

Figure 1: Aerial view looking southwest at excavations of 25FT13

In 1947, a Nebraska State Historical Society crew led by A. T. Hill began excavations in the spring. In September, October and early November, a River Basin Survey Crew led by Marvin Kivett continued the work (Kivett and Metcalf 1997).

From the end of March through August 1948, both the River Basin Survey and the Nebraska State Historical Society had crews working at the Reservoir. These crews contained as many as 15 to 20 men, mostly provided by the Bureau of Reclamation. It was during this 1947-48 work that large scale mechanical stripping of the sod was first used in the excavations. The 1946 to 1949 work by River Basin Survey and Nebraska State Historical Society focused on Archeology from the Woodland and Upper Republican Periods. In all, twenty-one sites were investigated, forty-nine houses and many other features were excavated.

Somewhat overlapping the time of these excavations were a series of excavations by the University of Nebraska State Museum (Davis and Schultz 1952), which focused exclusively on PaleoIndian and Paleontological Sites in the Reservoir Area. This specifically included sites such as Lime Creek (25FT41), Red Smoke (25FT42) and Allen (25FT50).

This research took place from 1946 to 1952, under the leadership of C. Bertrand Schultz and W. D. Frankforter (1948), Preston Holder and Joyce Wike (1949), and E. Mott Davis (1953, 1962). All work at the Reservoir from 1946 to 1952 was research directly related to construction of the Medicine Creek Dam.

In the fall of 1967, additional research was undertaken at Medicine Creek Lake. This time the University of Missouri sponsored a seminar on Central Plains Archeology, taught by W. Raymond Wood. The class excavated a single Upper Republican house, known as the Mowry Bluff Site. For comparison, a second house of the Nebraska Phase was also excavated along the Missouri

River further east, as part of that project. The field work was completed in September, and the analysis was undertaken during the following Fall Semester. A comparison of the information recovered from the two houses was detailed and interpreted in a Memoir of the *Plains Anthropologist* edited by Wood (1969).

In the 1970's and 1980's, the University of Nebraska State Museum (Meyers 1976, 1981,1982) and Anthropology Department (Pepperl 1981) continued to assist the Bureau of Reclamation by salvaging archeological and Paleontological materials exposed by construction around the Lake. In the 1980's, Bureau of Reclamation Archeologists became concerned about shoreline erosion affecting sites at the Reservoir, and also began a series of small surveys in advance of small construction projects around the Reservoir. At this time, there were 35 sites recorded on federal land at the Reservoir. Jeff and Suzanne (Bradley) Kenyon began working at the Reservoir (Bradley 1984a & b), along with Dr. Donna Roper, then working for Gilbert Commonwealth under a contract with the Bureau of Reclamation. Their goal was to identify and evaluate sites along the Reservoir, which were being destroyed by shoreline erosion. In 1987, the author and Brad Coutant were also hired by the Great Plains Regional Office of the Bureau of Reclamation in Billings, Montana, and became involved in the archeology at Medicine Creek. They discovered mammoth bone eroding from a high cut bank during a six week stay at the Lake in the Fall of 1987. Steve Holen and Dr. David May began salvage excavation and research on this mammoth site in 1988. The site is approximately 18,500 years old, and contains bone flakes, impact points, and other patterns which would seem to indicate human involvement. Holen has revisited this site regularly in the succeeding ten years, to continue his research and protect newly exposed material along the shoreline (Holen 1990, 1994, etc.). In 1988, the author was relocated to Grand Island Nebraska as the Nebraska-Kansas Area Archeologist, and began to regularly visit the Reservoir (ie. Blasing 1987, 1988a & b).

The 1990's saw a more methodical attempt to fully inventory and evaluate all archeological sites around the Reservoir. A series of field schools, operated under cooperative agreements between the Bureau of Reclamation and area universities, have visited the reservoir each summer to help with this work. This began with the University of Nebraska field school under the direction of Dr. Douglas Bamforth, in 1990. Bamforth has continued to reevaluate collections from the 1940's and 50's work of the University of Nebraska State Museum through his current faculty position at the University of Colorado, Boulder. Additional field schools have followed, including several seasons of research by Dr. Don Blakeslee with Wichita State University, and Dr. Donna Roper at Kansas State University. Members of the Nebraska Archeological Society, a statewide amateur group, have donated time, and also made significant contributions to the various field projects mentioned above. Virtually all federal lands at Medicine Creek Lake have now been surveyed, and more than 350 archeological sites recorded have been recorded there.

Archeology

Medicine Creek is located in an area of low population density, where there are very few federal lands. Because of this, there has not been extensive survey for archeological sites in the area. The few federal reservoirs are very important to archeological research, because they are the only large land areas that have been extensively examined. Since funding for excavation on private

land is often difficult to procure, the federal reservoirs also provide a large percentage of the excavated sites in the region.

The work done at Medicine Creek over the years has contributed heavily to the definition of at least three cultural units. The work by the University of Nebraska State Museum identified what was called the Frontier Complex. These are the only late Paleo Indian sites found in the area. The Kieth site and other Woodland material from the Reservoir, were excavated in 1947 and 1948. This provided much of the information for definition of the Kieth Focus (Kivett 1953:133-135). The wealth of data provided by the many houses excavated by the Nebraska State Historical Society and River Basin Survey in the late 1940's, has provided much of the basis of the definition of the Upper Republican Phase, although this name had been used a broad designation as early as 1933 (Strong 1933). With work such as that being done at the over 18,000 year old La Sena mammoth Site, there is still potential for additional cultural units to be defined at the Lake.

Work at Medicine Creek has also been the source of some very innovative methodology. Probably the foremost was the use of heavy power equipment in the 1940's to expose sites. This method was necessitated by the rush to complete excavations before they were destroyed by dam construction and flooding of the Reservoir. It was discovered, however, that the heavy equipment, which seemed so potentially destructive to underlying archeological deposits, actually allowed a much better understanding of the extent and relative locations of the features. It also led to the discovery of many additional features and sites, which would have been missed, without the heavy equipment to reveal their hidden locations. When low altitude aerial photography was added to the mix, a much better understanding of relationships within the site was obtained. With the use of heavy equipment, what at first to appeared to be an expedient trade off was soon revealed as both more efficient and more thorough than traditional methods. The method was soon widely imitated on other large construction projects throughout the country. The fact that the heavy equipment was already present for the construction project, also alleviated the worries about the high cost of using heavy equipment.

The methods used by Ray Wood and his class in 1967, have also been widely copied. The idea of using a field project and seminar to provide both a practical and a general background on Plains prehistory was attractive as both a teaching and a research method. The concept of having a number of trained students, each pursuing a separate study focus, at the same site and where most of them had helped excavate, provided a wide range of both data and perspectives.

In the last decade, at least two additional methodologies have been developed. Steve Holen has developed the idea of having a micro vertebrate paleontologist on site to identify, trace and excavate rodent burrows separately, before excavating the archeological level. This method removes many of the site contamination concerns inherent with excavating a possible preClovis level. At the Lime Creek and Red Smoke Sites, Larry Conyers, working with Doug Bamforth at the University of Colorado, Boulder has adapted a method of surveying for buried minerals, to map deeply buried prehistoric living surfaces. This is done by lowering the receiver of a ground penetrating radar system down into a series of two inch core holes on the site.

Summary

In places where there is very little federal land and low population density, federal reservoirs such as Medicine Creek can have a major influence on the archeological knowledge of the area and development of new methods. Medicine Creek provides an excellent example, because of the heavy concentration of archeological sites and the diversity of time periods represented. This combination has allowed the work at the Reservoir to provide key information for defining cultural units. Work at the Lake has also contributed to some notable pioneering in methodology. In part this is no doubt due to the diversity of researchers working in the same area and on the same problems, if not always at the same time. Most of these gains would not have been possible if not for the driving force, and subsequent funding, from Federal cultural resource protection laws.

In the fall of 1997, a 50th anniversary celebration was held at Medicine Creek to celebrate 50 years since the start of federal excavation at the Lake. More than 90 people attended this celebration, including several researchers from the 1940's projects. It is hard to estimate how many researchers and students have worked at Medicine Creek over the years, but it must surely be in the hundreds. The knowledge gained there can not help but have influenced the direction of Plains archeology.

Bibliography

Barbour, Erwin H.
1927 Preliminary Notice of a New Proboscidean, *Amebelodon frickii*
Bulletin of the Nebraska State Museum 1:131-134

1930 *Amebelodon sinclairi*
Bulletin of the Nebraska State Museum 1:155-158

Blasing, Bob
1987 *Topographic and Magnetometric Mapping of Archeological Sites Threatened by Shoreline Erosion, at Harry Strunk Reservoir, Frontier County, Nebraska*
Report for the Bureau of Reclamation
1988a *Class III Cultural Resource Survey for the Relocation of Two Infant Burials from the Historic Period, at Medicine Creek Reservoir, Nebraska*
Report for the Bureau of Reclamation

1988b *Preliminary Report on Emergency Excavation of a Red Ochre Burial at 25FT18 on Medicine Creek Reservoir, Frontier County, Nebraska*
Report for the Bureau of Reclamation

Bradley, Suzanne R.
1984a *Shoreline Survey of Harry Strunk Lake, Nebraska*
Report for the Bureau of Reclamation

1984b *Underground Pipeline at Harry Strunk Lake, Nebraska*
Report for the Bureau of Reclamation

Brice, J. C.
1966 Erosion and Deposition in the Loess-mantled Great Plains, Medicine Creek Drainage Basin, Nebraska
U. S. Geological Survey Professional Paper 352-H

Elias, Gregory K.
1949 *The Sedimentation and Geologic History of Certain Terraces in Frontier County, Nebraska*
M.A. Thesis, University of Nebraska, Lincoln

Davis, E. Mott
1953 Recent Data from Two PaleoIndian Sites on Medicine Creek, Nebraska
American Antiquity 18(4):380-386

1962 Archeology of the Lime Creek Site in Southwestern Nebraska
Special Publication No. 3, University of Nebraska State Museum, Lincoln

Davis, E. Mott and C. B. Schultz
1952 The Archeological and Paleontological Salvage Program at the Medicine Creek Reservoir, Frontier County, Nebraska
Science 115(2985):288-290

Holder, Preston and Joyce Wike
1949 The Frontier Complex: A Preliminary Report on a Prehistoric Hunter's Camp in Southwestern Nebraska
American Antiquity 14(4)pt.1:260-266

Kivett, Marvin
1947 *Preliminary Appraisal of the Archeological and Paleontological Resources of Medicine Creek Reservoir, Frontier County, Nebraska*
Report on File at the N.P.S. Midwest Archeological Center, Lincoln, Nebraska

Kivett, Marvin F.
1953 The Woodruff Ossuary, A Prehistoric Burial Site in Phillips County, Kansas
Bureau of American Ethnology, Bulletin 154 Washington D. C.

Kivett, Marvin F. And George S. Metcalf
1997 The Prehistoric People of the Medicine Creek Reservoir, Frontier County, Nebraska: An Experiment in Mechanized Archeology (1946-1948)
Plains Anthropologist 42(162)

Meyers, Thomas P.
1976 *Report on Burials Removed from Harry Strunk Lake, Frontier County, Nebraska*
Report by the University of Nebraska State Museum

1981 *Proposal for the Recovery of Cultural Information from Partially Destroyed House Sites and Vandalized Localities at 25FT3*
Report by the University of Nebraska State Museum

1982 Preliminary Report on Ceramics from the 1981 Excavation at the Owens Site (25FT3)
Nebraska Archeological Society Newsletter 1(1):5-8

Pepperl, Robert E.
1981 *Emergency Evaluation of Fossil Proboscidean Remains: Harry Strunk Lake, Medicine Creek Dam, Frontier County, Nebraska*
Report by the University of Nebraska

Schultz, C. B. and W. D. Frankforter
1948 Preliminary Report on the Lime Creek Sites: New Evidence of Early Man in Southwestern Nebraska
Bulletin of the University of Nebraska State Museum 3(4)pt.2:43-62

Strong, William Duncan
1933 The Plains Culture Area in the Light of Archeology
American Anthropologist 35:271-287

1935 An Introduction to Nebraska Archeology
Smithsonian Miscellaneous Collections (93)10
Smithsonian Institution, Washington D. C.

Wedel, Waldo
1933 Preliminary notes on the Archeology of Medicine Valley in Southwestern Nebraska
Nebraska History 14(2):144-165

1934 Contributions to the Archeology of the Upper Republican Valley
Nebraska History 15(3):133-250
Wood, W. Raymond
1969 Two House Sites in the Central Plains: An Experiment in Archaeology
Plains Anthropologist 14(44)Pt.2